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(54) Title: ANTIPERSPIRANT WIPES

(57) Abstract: A wet wipe for reducing body perspiration, comprising an effective amount of an antiperspirant, comprised in a solution or suspension based on a mixture of inert organic materials and water or on one or more inert organic materials, and impregnated on a sheet material carrier. The antiperspirant may be provided in aqueous solution. The wet wipe may further comprise conventional cosmetic additives that contain pH buffering materials, preservatives and perfumes.

ANTIPERSPIRANT WIPES

Field of the Invention

The present invention relates to antiperspirant compositions. More particularly, the invention relates to antiperspirant products in sheet material form, such as towlettes, wipes and napkins.

Background of the Invention

Excessive sweating is a very common problem that plagues both genders throughout the year, and particularly during summer months. Sweating is largely responsible, not only for discomfort, but also for bad odors which are caused, e.g., in the armpit, by bacteria growing on the skin. The growth of bacteria is accelerated by sweat, and so is the creation of bad odors which are related to the decomposition products resulting from the reaction which takes place on the surface of the skin between the bacteria and certain body secretions. Perspiration adds to the problem of spreading of body secretion and enhances it.

One way to control body perspiration is hygiene. Cleaning the body often removes bacteria and the said decomposition products. However, it is practically impossible to shower several times a day. Thus, antiperspiration preparations are necessary to control the problem in individuals suffering from excessive perspiration. Various compositions, preparations and deodorant pads have been proposed in the art to control

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perspiration and odors associated with the human body. These prior art preparations, which are usually provided in the form of a spray, a roller a stick or a gel, do not clean the skin, and further, for those multi-application devices such as sticks and rollers, are contaminated by skin bacteria which are then transported from one site to the other, which is unhealthy and against hygiene of the skin.

Another approach is that of using alcohol-based compositions, which can be used effectively to remove bacteria from the skin. US 5,403,588 describes a body deodorant composition consisting essentially of a combination of 70% isopropyl alcohol, acetone and aluminum chloride. The body deodorizing composition is incorporated into an absorbent cotton pad as a solution and packaged in individual pouches for use. Rubbing the saturated cotton pad is stated to control body odor through cleansing the skin and removing the substances thereon that contribute to body odor. Typical body deodorant pads according to US 5,403,588 comprise an absorbent material containing a body deodorant solution consisting essentially of: a solution of 88.5 to 96.2% of a 70% isopropyl alcohol solution and 3.8 to 11.5% acetone by volume, and 3.3 to 3.8% aluminum chloride by weight of said solution.

The composition of US 5,403,588, like many other prior art products, has the severe drawback of being irritant to the skin. High concentrations of

alcohol, up to 96.2%, may also remove beneficial materials from the skin surface, thus removing its natural protection. Likewise, acetone, which is present in a high amount (3.8 - 11.5%), while effective in aiding to remove materials from the skin, is a well known irritant and is not recommended for repeated skin application.

The prior art solutions to the problem of perspiration, and the related problem of body odor, all present drawbacks: they are either ineffective, or not sufficiently hygienic, or employ irritant materials. The art has so far failed to provide simple, healthy and effective means for reducing body perspiration, without incurring the aforementioned drawbacks.

It is therefore an object of this invention to provide antiperspirant products that overcome all the aforesaid prior art drawbacks.

It is another purpose of this invention is to provide antiperspirant products that are effective in decreasing sweat.

It is yet another object of the invention to provide antiperspirant agents that can be easily and conveniently used, virtually everywhere, in a simple and efficient manner.

Other purposes and advantages of this invention will appear as the description proceeds.

Summary of the Invention

The invention is directed to a wet wipe for reducing body perspiration, comprising an effective amount of an antiperspirant, impregnated on a sheet material carrier. In the context of this invention, the term "antiperspirant" means any material that, when applied to the skin, reduces skin perspiration. Information concerning antiperspirants can be found in the FDA Tentative Final Monograph, US 47 Federal Register 36492-505 (August 20, 1982). Additional information on antiperspirant agents can be found, e.g., in the *International Cosmetic Ingredient Dictionary and Handbook*, Seventh Edition, 1997, published by The Cosmetic, Toiletry and Fragrance Association (CTFA).

Throughout this specification, when reference is made to "fabric", or to "sheet material", this term is meant to indicate any type of sheet material that can be impregnated with a liquid solution and which can retain at least some moisture, be it made of paper, fabric or synthetic material, or of any other suitable impregnable material.

The sheet material carrier can be of any suitable type well known in the cosmetic industry. According to a preferred embodiment of the invention, however, the sheet material carrier is a wipe made of non-woven fabric, or a towlette made of paper material. The key features of the sheet material carrier are that it must be impregnable, at least to some extent, it must be sufficiently soft so as not to irritate the skin mechanically, must be moisture resistant at least to the extent that it does not deteriorate on storage, and must be convenient to use in the specific package employed.

Suitable sheet material carriers will be easily identified by the skilled person.

The impregnation solution used will usually contain a preservative conventional in cosmetic uses. Illustrative and non-limitative examples of such preservatives and their average content include iodopropynyl butylcarbamate (0.03%), methylparaben (0.1%) and propylparaben (0.1%)

As will be appreciated by the skilled person, the wipes of the invention not only remove dirt from the skin, but also leave a residual amount of antiperspirant material on the skin, which provides a prolonged antiperspirant effect. Another advantage of the wipes of the invention over, for instance, sticks or rollers, is that they are disposable.

According to a preferred embodiment of the invention the wet wipe further comprises conventional cosmetic additives such as, but not limited to, pH buffering materials, preservatives and perfumes.

The exact content of the antiperspirant and of the water depends on the specific antiperspirant employed, and the skilled person will easily optimize a formulation for his specific requirements. Typically, however, a wet wipe according to the invention comprises about 0.1% to about 30% of antiperspirant, and about 40% to about 75% of water. It is possible, however, to reduce the amount of water, or to replace it entirely, with inert organic materials, such as silicone materials or cosmetically-acceptable glycols to give organic-based or water-organic based solutions or suspensions.

Illustrative and non-limitative examples of antiperspirants useful in the wet wipes of the invention are:

Aluminum chlorohydrate;

Aluminum dichlorohydrate;

Aluminum sesquichlorohydrate;

Aluminum chlorohydrex propylene glycol complex;

Aluminum dichlorohydrex propylene glycol complex;

Aluminum sesquichlorohydrex propylene glycol complex;

Aluminum chlorohydrex polyethylene glycol complex;

Aluminum dichlorohydrex polyethylene glycol complex;

Aluminum sesquichlorohydrex polyethylene glycol complex;

Aluminum zirconium trichlorohydrate;

Aluminum zirconium tetrachlorohydrate;

Aluminum zirconium pentachlorohydrate;

Aluminum zirconium octachlorohydrate;

Aluminum zirconium trichlorohydrex glycine complex;

Aluminum zirconium tetrachlorohydrex glycine complex;

Aluminum zirconium pentachlorohydrex glycine complex;

Aluminum zirconium octachlorohydrex glycine complex;

Aluminum chloride;

Aluminum sulfate buffered.

In another aspect, the invention is directed to a method for manufacturing a wet wipe for reducing body perspiration, comprising impregnating a sheet material carrier with an effective amount of an antiperspirant in, optionally in the presence of conventional cosmetic additives, such as pH buffering materials, preservatives and perfumes.

According to a preferred embodiment of the invention the sheet material carrier is brought into contact with a solution comprising about 0.1% to about 30% antiperspirant in about 40% to about 75% of water. Of course, other non-essential additives can be added, and the addition of such conventional cosmetic additives is well within the scope of the skilled person.

Detailed Description of Preferred Embodiments

All the above and other characteristics and advantages of the invention will be better understood through the following illustrative and non-limitative description of preferred embodiments thereof.

Throughout this specification, unless otherwise specified, all percentages are by weight.

Example 1

An antiperspirant solution was prepared, having the following composition:

| | |
|--|-------|
| Glyceryl stearate (&) Cetareth 20 (&) | |
| Cetareth 12 (&) Cetearyl alcohol (&) | |
| Cetyl palmitate ⁽¹⁾ | 4.5% |
| Cetareth - 20 ⁽²⁾ | 1.0% |
| Coco-/Caprylate/Caprate ⁽³⁾ | 5.0% |
| Dicapryl ether | 5.0% |
| Water | 48.7% |
| Aluminum chlorohydrate | 20.0% |
| Parfume | q.s. |
| Preservative | q.s. |

⁽¹⁾ EMULGADE SE, ex Henkel KgaA, Germany

⁽²⁾ EMULGADE B, ex Henkel KgaA, Germany

⁽³⁾ Cetiol LC, ex Henkel KgaA, Germany

The solution was applied to a soft, non-woven fabric (FB-20 foam bonded nonwoven fabric, ex Pantex, Italy). The wipes were then stacked and placed in a conventional box for wet wipes, from which wipes were dispensed at intervals. The wipes were used by gently rubbing the axillary area, and were found to effectively reduce perspiration for about 24 hours from application. Reduction of perspiration was obtained mainly by the action of aluminum chlorohydrate, a known antiperspirant.

It should be noted that, contrarily to the prior art, the antiperspirant composition of the invention is provided in water-based form, and does not contain any irritant or harmful materials, such as acetone nor does it contain a major proportion of alcohol.

Example 2

An antiperspirant solution was prepared, having the following composition:

| | |
|------------------------|----------------------|
| Glyceryl stearate (&) | Cetareth 20 (&) |
| Cetareth 12 (&) | Cetearyl alcohol (&) |
| Cetyl palmitate | 4.5% |
| Cetareth - 20 | 1.0% |
| Dioctylcyclohexane | 5.0% |
| Dicapryl ether | 5.0% |
| Water | 72.5% |
| Aluminum chlorohydrate | 10.0% |
| Triethyl citrate | 2.0%. |

Wet wipes were prepared as in Example 1, but using a different sheet material (TB-V/20 calendered nonwoven fabric, ex Pantex, Italy), and the product was placed in a laminate pocket. Essentially the same antiperspirant effect was obtained.

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Example 3

An antiperspirant solution was prepared, having the following composition:

| | |
|--|-------|
| Cetyl/Dimethicone copolyol ⁽⁴⁾ | 2.0% |
| Cyclopentasiloxane and Cyclohexasiloxane ⁽⁵⁾ | 20.0% |
| Water | 61.0% |
| Aluminum chlorohydrate | 17.0% |
| Iodopropynyl butylcarbamate | 0.03% |
| Fragrance | q.s. |
| Preservative | q.s. |

⁽⁴⁾ ABIL EM 90, ex TH. GOLDSCHMIDT AG, Germany

⁽⁵⁾ ABIL B 8839, ex TH. GOLDSCHMIDT AG, Germany

Wet wipes were prepared as in Example 1, but using a different sheet material (FB-C/25 foam bonded nonwoven fabric, ex Pantex, Italy), and essentially the same antiperspirant effect was obtained.

Example 4

An antiperspirant solution was prepared, having the following composition:

| | |
|--|------|
| Mod. Fatty alcohol PEG sorbitan ester ⁽⁶⁾ | 3.5% |
| PEG-40 ⁽⁷⁾ hydrogenated castor oil | 4.0% |
| Almond oil | 1.0% |

| | |
|---------------------------------------|-------|
| Glyceryl stearate | 1.0% |
| PEG-7 ⁽⁶⁾ glyceryl cocoate | 2.0% |
| Isopropyl palmitate | 4.0% |
| Water | 75.5% |
| Glycerol | 2.0% |
| Propylene glycol | 2.5% |
| Aluminum chlorohydrate | 4.0% |
| Perfume oil | 0.2% |
| Preservative | 0.3% |

(6) Sympatens-O/130G, ex Dr. W Kolb AG, Switzerland

(7) Polymer of ethylene dioxide of formula H(OCH₂CH₂)_nOH; average value of n=40

(8) Polymer of ethylene dioxide of formula H(OCH₂CH₂)_nOH; average value of n=7

Wet wipes were prepared as in Example 1, and essentially the same antiperspirant effect was obtained.

Example 5

An antiperspirant solution was prepared, having the following composition:

| | |
|---------------------------|------|
| Steareth-2 ⁽⁹⁾ | 4.0% |
|---------------------------|------|

| | |
|--------------------------------------|--------|
| Steareth-100 ⁽¹⁰⁾ | 1.0% |
| PPG-15 Stearyl ether ⁽¹¹⁾ | 5.0% |
| Propylene glycol | 3.0% |
| Water | 73.35% |
| Aluminum chlorohydrate | 10.0% |
| Perfume | 0.2% |
| Preservative | 0.45% |

⁽⁹⁾ Brij 72, ethoxylated stearyl alcohol, ex ICI, England

⁽¹⁰⁾ Brij 700, ethoxylated stearyl alcohol, ex ICI, England

⁽¹¹⁾ Arlamol E, propoxylated stearyl alcohol, ex ICI, England

Example 6

An antiperspirant solution was prepared, having the following composition:

| | |
|------------------------------|-------|
| Aluminum chlorohydrate | 19.5% |
| Styrene acrylamide copolymer | 1.95% |
| Propylene glycol | 3.0% |
| Fragrance | 0.1% |
| Chamomile ext. | 0.1% |

Water

up to 100%

Wet wipes were prepared as in Example 1, and essentially the same antiperspirant effect was obtained.

While embodiments of the invention have been described by way of illustration, it will be understood that the invention can be carried out by persons skilled in the art with many modifications, variations and adaptations, without departing from its spirit or exceeding the scope of the claims.

CLAIMS

1. A wet wipe for reducing body perspiration, comprising an effective amount of an antiperspirant impregnated on a sheet material carrier.
2. A wet wipe according to claim 1, wherein the antiperspirant is provided in aqueous solution.
3. A wet wipe according to claim 1, wherein the antiperspirant is comprised in a solution or suspension based on a mixture of inert organic materials and water.
4. A wet wipe according to claim 1, wherein the antiperspirant is comprised in a solution or suspension based on one or more inert organic materials.
5. A wet wipe according to any one of claims 1 to 4, further comprising conventional cosmetic additives.
6. A wet wipe according to claim 5, wherein the conventional cosmetic additives comprise pH buffering materials, preservatives and perfumes.
7. A wet wipe according to any one of claims 1 to 3, 5 or 6, comprising 0.1% to 30% antiperspirant, and 40% to 75% of water.
8. A wet wipe according to any one of claims 1 to 7, wherein the antiperspirant is selected from among:

Aluminum chlorohydrate;
Aluminum dichlorohydrate;
Aluminum sesquichlorohydrate;
Aluminum chlorohydrex propylene glycol complex;
Aluminum dichlorohydrex propylene glycol complex;
Aluminum sesquichlorohydrex propylene glycol complex;
Aluminum chlorohydrex polyethylene glycol complex;
Aluminum dichlorohydrex polyethylene glycol complex;
Aluminum sesquichlorohydrex polyethylene glycol complex;
Aluminum zirconium trichlorohydrate;
Aluminum zirconium tetrachlorohydrate;
Aluminum zirconium pehtachlorohydrate;
Aluminum zirconium octachlorohydrate;
Aluminum zirconium trichlorohydrex glycine complex;
Aluminum zirconium tetrachlorohydrex glycine complex;
Aluminum zirconium pentachlorohydrex glycine complex;
Aluminum zirconium octachlorohydrex glycine complex;
Aluminum chloride; and
Aluminum sulfate buffered.

9. A method of manufacturing a wet wipe for reducing body perspiration, comprising impregnating a sheet material carrier with an effective amount of an antiperspirant in solution.
10. A method according to claim 9, further comprising adding to the solution conventional cosmetic additives.
11. A method according to claim 10, wherein the conventional cosmetic additives comprise pH buffering materials, preservatives and perfumes.
12. A method according to any one of claims 6 to 8, wherein the solution is an aqueous solution comprising 0.1% to 30% antiperspirant in 40% to 75% of water.
13. A wet wipe for reducing body perspiration, essentially as described and illustrated, and with particular reference to the examples.
14. A method of manufacturing a wet wipe for reducing body perspiration, essentially as described and illustrated, and with particular reference to the examples.

INTERNATIONAL SEARCH REPORT

Int'l Application No
PCT/IL 00/00449

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K7/32 A61K7/50

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

CHEM ABS Data, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| X | DATABASE CHEMICAL ABSTRACTS 'Online! stn; abstract 112: 104 909, XP002151020 abstract & JP 01 143808 A (KANEBO, LTD) 6 June 1989 (1989-06-06) --- DATABASE CHEMICAL ABSTRACTS 'Online! STN; abstract 132: 255 763, XP002151021 abstract & JP 2000 095657 A (UENO YAPPONHO K.K.) 4 April 2000 (2000-04-04) --- -/-- | 1 |
| P, X | | 1 |

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
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| Date of the actual completion of the international search | Date of mailing of the international search report |
| 25 October 2000 | 15/11/2000 |
| Name and mailing address of the ISA | Authorized officer |
| European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel: (+31-70) 340-2040, Tx. 31 651 epo nl. Fax: (+31-70) 340-3016 | Glikman, J-F |

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

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| International Application No |
| PCT/IL 00/00449 |

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
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| A | WO 94 20067 A (THE BOOTS CO., PLC) 15 September 1994 (1994-09-15) page 6, line 25-29; example 9 ----- | 1 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

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| International Application No |
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| Patent document cited in search report | Publication date | Patent family member(s) | | Publication date |
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